

**ABSTRACT**

According to one aspect of the disclosure and a particular example application directed to a flip-chip packaged die, a method for detecting a defect in a surface of the die includes directing light through a first beam splitter; directing light of a known

- 5 wavelength at the beam splitter, wherein the first beam splitter is adapted to direct a first beam of light into the back side of the semiconductor die which reflects a second beam of light back; and redirecting the second beam to a second beam splitter, the second beam splitter generating third and fourth beams of light. Analysis of the third and fourth beams of light is then performed, and this analysis can include using detectors in respective
- 10 paths of the third and fourth beams of light to generate an arrival time differential and then comparing the differential with a reference previously generated using a nondefective die.